

PATENT COOPERATION TREATY

10/089128

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING
SUBMISSION OR TRANSMITTAL
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

HAMLET-COX, Diana
Incyte Genomics, Inc.
3160 Porter Drive
Palo Alto, CA 94304
United States of America

RECEIVED

JAN 03 2003

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Date of mailing (day/month/year) 01 December 2002 (01.12.02)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference PT-1066 PCT	
International application No. PCT/US00/25643	
International publication date (day/month/year) 29 March 2001 (29.03.01)	
International filing date (day/month/year) 19 September 2000 (19.09.00)	Priority date (day/month/year) 23 September 1999 (23.09.99)
Applicant INCYTE GENOMICS, INC. et al	

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23 Sept 1999 (23.09.99)	60/155,760	US	14 Dece 2000 (14.12.00)
24 Sept 1999 (24.09.99)	60/156,294	US	14 Dece 2000 (14.12.00)
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24 Nove 1999 (24.11.99)	60/167,517	US	12 Dece 2000 (12.12.00)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Khemais BRAHMI
Facsimile No. (41-22) 740.14.35	Telephone No. (41-22) 338.83.38

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NOTIFICATION CONCERNING SUBMISSION OR TRANSMITTAL OF PRIORITY DOCUMENT

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02 Dece 1999 (02.12.99)	60/168,613	US	19 Nove 2002 (19.11.02)

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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
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29 March 2001 (29.03.2001)

PCT

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(21) International Application Number: PCT/US00/25643

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19 September 2000 (19.09.2000)

(25) Filing Language: English

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60/168,611	2 December 1999 (02.12.1999)	US
60/168,613	2 December 1999 (02.12.1999)	US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

US	60/155,760 (CIP)
Filed on	23 September 1999 (23.09.1999)
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US	60/168,611 (CIP)
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(71) Applicant (for all designated States except US): INCYTE GENOMICS, INC. [US/US]; 3160 Porter Drive, Palo Alto, CA 94304 (US).

[Continued on next page]

(54) Title: MOLECULES FOR DIAGNOSTICS AND THERAPEUTICS

(57) Abstract: The present invention provides purified human polynucleotides for diagnostics and therapeutics (dithp). Also encompassed are the polypeptides (DITHP) encoded by dithp. The invention also provides for the use of dithp, or complements, oligonucleotides, or fragments thereof in diagnostic assays. The invention further provides for vectors and host cells containing dithp for the expression of DITHP. The invention additionally provides for the use of isolated and purified DITHP to induce antibodies and to screen libraries of compounds and the use of anti-DITHP antibodies in diagnostic assays. Also provided are microarrays containing dithp and methods of use.

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(72) Inventors; and

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- (74) Agents: **HAMLET-COX, Diana et al.**; Incyte Genomics, Inc., 3160 Porter Drive, Palo Alto, CA 94304 (US).

- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

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- Without international search report and to be republished upon receipt of that report.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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60/168.429	30 November 1999 (30.11.1999)	US
60/168.432	30 November 1999 (30.11.1999)	US
60/168.197	30 November 1999 (30.11.1999)	US
60/168.468	1 December 1999 (01.12.1999)	US
60/168.599	1 December 1999 (01.12.1999)	US
60/168.857	2 December 1999 (02.12.1999)	US
60/168.611	2 December 1999 (02.12.1999)	US
60/168.613	2 December 1999 (02.12.1999)	US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

US	60/155.760 (CIP)
Filed on	23 September 1999 (23.09.1999)
US	60/156.294 (CIP)
Filed on	24 September 1999 (24.09.1999)
US	60/155.939 (CIP)
Filed on	24 September 1999 (24.09.1999)

US	60/156.565 (CIP)
Filed on	28 September 1999 (28.09.1999)
US	60/156.624 (CIP)
Filed on	28 September 1999 (28.09.1999)
US	60/156.625 (CIP)
Filed on	28 September 1999 (28.09.1999)
US	60/167.542 (CIP)
Filed on	24 November 1999 (24.11.1999)
US	60/167.522 (CIP)
Filed on	24 November 1999 (24.11.1999)
US	60/167.453 (CIP)
Filed on	24 November 1999 (24.11.1999)
US	60/167.517 (CIP)
Filed on	24 November 1999 (24.11.1999)
US	60/167.520 (CIP)
Filed on	24 November 1999 (24.11.1999)
US	60/167.410 (CIP)
Filed on	24 November 1999 (24.11.1999)
US	60/167.521 (CIP)
Filed on	24 November 1999 (24.11.1999)
US	60/167.943 (CIP)
Filed on	29 November 1999 (29.11.1999)
US	60/167.945 (CIP)
Filed on	29 November 1999 (29.11.1999)
US	60/168.265 (CIP)
Filed on	30 November 1999 (30.11.1999)
US	60/168.429 (CIP)
Filed on	30 November 1999 (30.11.1999)
US	60/168.432 (CIP)
Filed on	30 November 1999 (30.11.1999)
US	60/168.197 (CIP)
Filed on	30 November 1999 (30.11.1999)
US	60/168.468 (CIP)
Filed on	1 December 1999 (01.12.1999)
US	60/168.599 (CIP)
Filed on	1 December 1999 (01.12.1999)
US	60/168.857 (CIP)
Filed on	1 December 1999 (01.12.1999)
US	60/168.611 (CIP)
Filed on	2 December 1999 (02.12.1999)
US	60/168.613 (CIP)
Filed on	2 December 1999 (02.12.1999)

(71) Applicant (for all designated States except US): INCYTE GENOMICS, INC. [US/US]: 3160 Porter Drive, Palo Alto, CA 94304 (US).

[Continued on next page]

(54) Title: MOLECULES FOR DIAGNOSTICS AND THERAPEUTICS

(57) Abstract: The present invention provides purified human polynucleotides for diagnostics and therapeutics (dithp). Also encompassed are the polypeptides (DITHP) encoded by dithp. The invention also provides for the use of dithp, or complements, oligonucleotides, or fragments thereof in diagnostic assays. The invention further provides for vectors and host cells containing dithp for the expression of DITHP. The invention additionally provides for the use of isolated and purified DITHP to induce antibodies and to screen libraries of compounds and the use of anti-DITHP antibodies in diagnostic assays. Also provided are microarrays containing dithp and methods of use.



WO 01/21836 A3



(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **HODGSON, David, M.** [US/US]; 567 Addison Avenue, Palo Alto, CA 94301 (US). **LINCOLN, Stephen, E.** [US/US]; 725 Sapphire Street, Redwood City, CA 94061 (US). **RUSO, Frank, D.** [US/US]; 1583 Courdillaeras Road, Redwood City, CA 94062 (US). **SPIRO, Peter, A.** [US/US]; Apt. B16, 3875 Park Boulevard, Palo Alto, CA 94306 (US). **BANVILLE, Steven, C.** [US/US]; 604 San Diego Avenue, Sunnyvale, CA 94086 (US). **BRATCHER, Shawn, R.** [US/US]; 550 Ortega Avenue #B321, Mountain View, CA 94040 (US). **DUFOUR, Gerard, E.** [US/US]; 5327 Greenridge Road, Castro Valley, CA 94552-2619 (US). **COHEN, Howard, J.** [US/US]; 3272 Cowper Street, Palo Alto, CA 94306-3004 (US). **ROSEN, Bruce, H.** [US/US]; 177 Hanna Way, Menlo Park, CA 94025 (US). **SHAH, Purvi** [IN/US]; 859 Salt Lake Drive, San Jose, CA 95133 (US). **CHALUP, Michael, S.** [US/US]; Apt. 6, 183 Acalanes Drive, Sunnyvale, CA 94086 (US). **HILLMAN, Jennifer, L.** [US/US]; 230 Monroe Drive #17, Mountain View, CA 94040 (US). **JONES, Anissa, Lee** [US/US]; 445 South 15th Street, San Jose, CA 95112 (US). **YU, Jimmy, Y.** [US/US]; 37330 Portico Terrace, Fremont, CA 94536-7901 (US). **GREENAWALT, Lila, B.** [US/US]; 1596 Ballantree Way, San Jose, CA 95118-2106 (US). **PANZER, Scott, R.** [US/US]; 965 East El Camino #621, Sunnyvale, CA 94087 (US). **ROSEBERRY, Ann, M.** [US/US]; 725 Sapphire Street, Redwood City, CA 94061 (US). **WRIGHT, Rachel, J.** [NZ/US]; 339 Anna Way, Mountain View, CA 94043 (US). **CHEN, Wensheng** [CN/US]; 210 Easy Street #25, Mountain View, CA 94043 (US). **LIU, Tommy, F.** [US/US]; 201 Otilia Street, Daly City, CA 94014 (US). **YAP, Pierre, E.** [US/US]; 201 Happy Hollow Court, Lafayette, CA 94549-6243 (US). **STOCKDREHER, Theresa, K.** [US/US]; 1596 Ontario

Drive #2, Sunnyvale, CA 94087 (US). **AMSHEY, Stefan** [US/US]; 1541 Canna Court, Mountain View, CA 94043 (US). **FONG, Willy, T.** [US/US]; 572 Cambridge Street, San Francisco, CA 94134 (US).

(74) Agents: **HAMLET-COX, Diana et al.**; Incyte Genomics, Inc., 3160 Porter Drive, Palo Alto, CA 94304 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
31 January 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 00/25643

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/00 C12N15/63 C07K14/47 C07K16/00 C12Q1/68
G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, EMBL, MEDLINE, EMBASE, BIOSIS, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL [Online] ID/AC: AC08383, 4 August 1999 (1999-08-04) DOE JOINT GENOME INSTITUTE: "Sequencing of human chromosome 5" XP002167659	1-3
Y	abstract	4-19
Y	--- WO 97 33551 A (MILLENNIUM PHARMACEUTICALS) 18 September 1997 (1997-09-18) the whole document	4-19
Y	--- WO 99 02724 A (MOUNT SINAI HOSPITAL CORP ;BERNSTEIN ALAN (CA); CARUANA GEORGINA () 21 January 1999 (1999-01-21) the whole document --- -/--	4-19

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

17 May 2001

Date of mailing of the international search report

16. 08. 2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Hagenmaier, S

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 00/25643

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 46293 A (FU GANG ;ZHANG QINGHUA (CN); WANG YAXIN (CN); WU JISHENG (CN); SHA) 16 September 1999 (1999-09-16) the whole document ---	
A	WO 98 56951 A (ABBOTT LAB) 17 December 1998 (1998-12-17) the whole document ---	
A	WO 98 25959 A (CHIRON CORP) 18 June 1998 (1998-06-18) the whole document ---	
P,X	EP 1 033 401 A (GENSET SA) 6 September 2000 (2000-09-06) Seq.ID 1363 (AC/ID:C01365), claim 1, 71pp ---	1-19
E	WO 01 02568 A (CHIRON CORP ;HYSEQ INC (US)) 11 January 2001 (2001-01-11) See Sequence 2127, AC/ID AX071655 ---	1-19
E	WO 01 07611 A (BAKER KEVIN P ;GENENTECH INC (US); GODDARD AUDREY (US); WOOD WILLI) 1 February 2001 (2001-02-01) See Sequence 416, AC/ID: AX079672 -----	1-19

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/25643

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-19 (all partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-19 (all partially)

Invention 1

Isolated polynucleotide comprising a polynucleotide sequence with Seq.ID 1, methods, compositions and microarrays using said polynucleotide, as well as a recombinant polynucleotide comprising a promoter sequence operably linked to Seq.ID 1 and a cell and a transgenic organism comprising such a recombinant polynucleotide, a purified polypeptide encoded by Seq.ID 1, a method of producing such a polypeptide, an antibody which specifically binds to this polypeptide as well as methods of identifying a test compound using this polypeptide.

2. Claims: 1-19 (all partially)

Inventions 2-71

Isolated polynucleotide comprising a polynucleotide sequence with Seq.ID 2, methods, compositions and microarrays using said polynucleotide, as well as a recombinant polynucleotide comprising a promoter sequence operably linked to Seq.ID 2 and a cell and a transgenic organism comprising such a recombinant polynucleotide, a purified polypeptide encoded by Seq.ID 2, a method of producing such a polypeptide, an antibody which specifically binds to this polypeptide as well as methods of identifying a test compound using this polypeptide.

..idem for Seq.IDs 3-71

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/25643

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9733551 A	18-09-1997	AU 2582897 A US 6100031 A	01-10-1997 08-08-2000
WO 9902724 A	21-01-1999	AU 8203598 A	08-02-1999
WO 9946293 A	16-09-1999	NONE	
WO 9856951 A	17-12-1998	EP 0990045 A	05-04-2000
WO 9825959 A	18-06-1998	AU 5796298 A EP 0948531 A	03-07-1998 13-10-1999
EP 1033401 A	06-09-2000	NONE	
WO 0102568 A	11-01-2001	AU 6069300 A	22-01-2001
WO 0107611 A	01-02-2001	AU 6117000 A	13-02-2001

PATENT COOPERATION TREATY

Incyte Pharmaceuticals, Inc.
Patent Department
Received

AUG 21 2001

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT
OR THE DECLARATION

(PCT Rule 44.1)

To:

INCYTE GENOMICS, INC.
Attn. HAMLET-COX, Diana
3160 Porter Drive
Palo Alto, CA 94304
UNITED STATES OF AMERICA

Date of mailing
(day/month/year)

16/08/2001

Applicant's or agent's file reference

PT-1066 PCT

FOR FURTHER ACTION

See paragraphs 1 and 4 below

International application No.

PCT/US 00/ 25643

International filing date
(day/month/year)

19/09/2000

Applicant

INCYTE GENOMICS, INC. et al.

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within **19 months** from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within **20 months** from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Catherine Humbert

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PT-1066 PCT	FOR FURTHER ACTION <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small>	
International application No. PCT/US 00/ 25643	International filing date (day/month/year) 19/09/2000	(Earliest) Priority Date (day/month/year) 23/09/1999
Applicant INCYTE GENOMICS, INC. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☒ contained in the international application in written form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

--
☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/25643

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-19 (all partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-19 (all partially)

Invention 1

Isolated polynucleotide comprising a polynucleotide sequence with Seq.ID 1, methods, compositions and microarrays using said polynucleotide, as well as a recombinant polynucleotide comprising a promoter sequence operably linked to Seq.ID 1 and a cell and a transgenic organism comprising such a recombinant polynucleotide, a purified polypeptide encoded by Seq.ID 1, a method of producing such a polypeptide, an antibody which specifically binds to this polypeptide as well as methods of identifying a test compound using this polypeptide.

2. Claims: 1-19 (all partially)

Inventions 2-71

Isolated polynucleotide comprising a polynucleotide sequence with Seq.ID 2, methods, compositions and microarrays using said polynucleotide, as well as a recombinant polynucleotide comprising a promoter sequence operably linked to Seq.ID 2 and a cell and a transgenic organism comprising such a recombinant polynucleotide, a purified polypeptide encoded by Seq.ID 2, a method of producing such a polypeptide, an antibody which specifically binds to this polypeptide as well as methods of identifying a test compound using this polypeptide.

..idem for Seq.IDs 3-71

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/25643

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/00 C12N15/63 C07K14/47 C07K16/00 C12Q1/68
G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, EMBL, MEDLINE, EMBASE, BIOSIS, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL [Online] ID/AC: AC08383, 4 August 1999 (1999-08-04) DOE JOINT GENOME INSTITUTE: "Sequencing of human chromosome 5" XP002167659	1-3
Y	abstract	4-19
Y	--- WO 97 33551 A (MILLENNIUM PHARMACEUTICALS) 18 September 1997 (1997-09-18) the whole document	4-19
Y	--- WO 99 02724 A (MOUNT SINAI HOSPITAL CORP ;BERNSTEIN ALAN (CA); CARUANA GEORGINA ()) 21 January 1999 (1999-01-21) the whole document	4-19
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

17 May 2001

Date of mailing of the international search report

16. 08. 2001

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INTL TIONAL SEARCH REPORT

.....ional Application No

PCT/US 00/25643

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 46293 A (FU GANG ;ZHANG QINGHUA (CN); WANG YAXIN (CN); WU JISHENG (CN); SHA) 16 September 1999 (1999-09-16) the whole document ---	
A	WO 98 56951 A (ABBOTT LAB) 17 December 1998 (1998-12-17) the whole document ---	
A	WO 98 25959 A (CHIRON CORP) 18 June 1998 (1998-06-18) the whole document ---	
P,X	EP 1 033 401 A (GENSET SA) 6 September 2000 (2000-09-06) Seq.ID 1363 (AC/ID:C01365), claim 1, 71pp ---	1-19
E	WO 01 02568 A (CHIRON CORP ;HYSEQ INC (US)) 11 January 2001 (2001-01-11) See Sequence 2127, AC/ID AX071655 ---	1-19
E	WO 01 07611 A (BAKER KEVIN P ;GENENTECH INC (US); GODDARD AUDREY (US); WOOD WILLI) 1 February 2001 (2001-02-01) See Sequence 416, AC/ID: AX079672 -----	1-19

INTERNATIONAL SEARCH REPORT

Information on patent family members

..... International Application No

PCT/US 00/25643

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			US	6100031 A	08-08-2000
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			EP	0948531 A	13-10-1999
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